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TEXAS A&M UNIVERSITY

CIVIL ENGINEERING DEPARTMENT

COLLEGE STATION TEXAS 77843

ENVIRONMENTAL ENGINEERING AND ENVIRONMENTAL SCIENCE DIVISION

June 10, 1976

Dr. Joshua Lederberg
Stanford University School of Medicine
Department of Genetics
Stanford University Medical Center
Stanford, California 94305

Dear Dr. Lederberg:

I'm so pleased with your letter of May 13th that I'm going to frame it. It's hard to believe that it was written almost a month ago. I deliberately delayed answering it to give me time to descend from Cloud Nine -- but I'm still up there!

Enclosed are two papers we have published concerning sodium -- or drinking water minerals -- and health. I think they're fairly self-explanatory. Also enclosed is the published version of the opinion paper I sent you. Note that the editor changed the title -- probably to please the Salt Institute and Water Conditioners Association. These people give me a bad time wherever I go. I am also enclosing some analyses of various beverages. Do you suppose you could get some sodium analyses of human milk from mothers on a low-sodium diet? This information is kind of crucial to questions pertaining to human evolution. I have some English information which cites human milk as containing 150 mg/l vs cow's milk of 580 mg/l, but it says nothing about whether the human donors might have been on a low-sodium diet.

I have, indeed, thought about univalent - divalent cationic balance. I have even considered applying the sodium adsorption ratio (SAR) of the irrigationist. But, I also thought that progress might be faster if I simply injected a little controversy into the hardness-cardiovascular death rate picture. How wrong I was; people just ignore me.

I can't help you on the bicarbonate thought. It does, however, raise an interesting point. Irrigationists have long been concerned about the bicarbonate content of irrigation waters because as the soil solution becomes more concentrated, calcium and magnesium precipitate as carbonates thereby increasing the relative proportion

of sodium (and potassium)! It's certainly obvious that agriculture has received its share of research funding -- compared to human health.

One of our campus colleagues -- an anthropologist -- is out collecting human coprolites from dry West Texas caves. Their ages vary from 400 to 8000 years. He agreed to supply us with some to see if we could recover coliphage. Do you think it's a waste of time? Dean Cliver from Wisconsin has offered to look for other viruses, but which ones I don't know.

I am chairman of the agenda subgroup for the National Drinking Water Advisory Council. As you should know by now, we want your participation at the next meeting which will be in San Francisco. My hopes are to have you and Dan Okun discourse on the topic of organics in drinking water and to also have two toxicologists of the Harold Hodge - Douglas Frost - Herb Stokinger point of view. There is no question in my mind as to what the outcome would be. Several on the Council are hopelessly biased (as I suppose I am -- in the other direction), but there are also several who would benefit enormously. I do hope you can find time to share with us.

Your contributions to the California Panel were very powerful. It would have been an impossible situation without you. I'll always be indebted to you for your help -- and for torpedoing the Lysenkoists!

Sincerely,


Harold W. Wolf

HWW:jf

enclosures